CHAPTER 1
INTRODUCTION

1.1 Objective

This document is designed to be the primary desk reference for acquisition personnel who will be required to acquire, develop, deliver and/or manage IETMs. It incorporates the status of existing/planned DoD and Service-unique policy guidance; discusses current and projected technologies related to the production of IETMs; analyzes the relationship between IETMs and training; and addresses delivery vehicles -- including the World Wide Web (WWW).

1.1.1 Background

An emerging area of technology, the acquisition, development, deployment and sustainment of electronic technical documentation and associated multimedia elements has rapidly gained acceptance throughout all branches of the military. The explosion in popularity of the Internet has produced an insatiable appetite for near real-time information needs. The demand by today's computer-literate society is for electronic media, not paper copy. Faced with shrinking defense budgets, weapon system managers have turned to one small corner of the information spectrum to meet its technology needs. The Interactive Electronic Technical Manual (IETM), first conceptualized in the1980s, became a reality by the early 1990s. In just the past few years, advances in computing power, increased functionality in IETM delivery software, portability of computers and reduced IETM development costs have paved the way for a successful electronic documentation delivery and sustainment program.

Simply put, an IETM is a technical manual that is prepared (authored) in digital form on a suitable medium, by means of an automated authoring system. It is designed for an electronic-window display to a user, and in most cases it possesses the following three characteristics:

- The format and style of the presented information are optimized for window presentation in an electronic form, either on a desktop PC, laptop PC, or other portable electronic display device. And, it is designed to assure maximum comprehension. That is, the presentation format is "frame-oriented," not "page-oriented."

- The elements of technical data constituting the IETM are so interrelated that a user's access to required information is facilitated to the greatest extent possible, and is achievable by a variety of paths.

- The computer-controlled IETM display device can function interactively (as a result of the user's request and information input) in providing procedural guidance, navigational directions, and supplemental information. It can also provide assistance in carrying out logistic-support functions supplemental to maintenance.

Not all IETMs fit the three criteria stated above. IETMs can range from raster-scanned images to sophisticated database management systems using expert systems and diagnostics. Using a strict

definition of IETMs, some digitized manuals should be referred to as Electronic Technical Manuals (ETMs). The term electronic technical manual (ETM) generally describes all combinations of technical manual data in digital formats, stored in optical or magnetic media, and viewed through electronic display devices. To avoid confusion, the more commonly used term IETM will be used throughout the *DSMC IETM Guide* to describe all forms of digital technical manuals (TMs).

By the mid to late 1990s, pilot programs emerged that coupled IETMs with multimedia training elements. The combination of electronic documentation with a multimedia editing and delivery system established the building blocks necessary for an Electronic Classroom (EC) environment. Armed with these technologies, military trainers now had the opportunity to develop more effective classroom instruction that could be extended into the field and reused. CD-ROMs containing entire technical manuals and lesson guides can now be provided to the user for just-in-time (JIT) refresher training upon returning to their duty station. The use of these Electronic Performance Support Systems (EPSS), where IETM technology is integrated with training programs, provides the capability to improve individual performance and reduce costs. When implemented properly, streamlining of the training pipeline can be accomplished.

1.1.2 Scope

The *DSMC IETM Guide* is a guidance document that does not establish policy or procedures. Many IETM requirements are Service-specific and have been identified within the *DSMC IETM Guide* for further investigation by the IETM acquisition manager. This guide should be used as a starting point for IETM development efforts and include consultation with the appropriate Service's IETM points of contact (identified in the Appendices) for further information and guidance. Due to the dynamic environment surrounding this subject matter, the contents and referenced requirements of this document will require periodic modification. Personnel are encouraged to access the latest version of the *DSMC IETM Guide* at:

http://www.dsmc.edu/IETM/guide.htm.

1.1.3 Organization of the Guide

The *IETM Guide* is presented as a series of building blocks to enhance your understanding of the IETM life cycle.

Chapter 2 summarizes the benefits of IETMs and their impact on logistic support systems.

Chapter 3 summarizes the different classes of IETMs.

Chapter 4 provides overall IETM acquisition guidance.

Chapter 5 reviews pre-IETM development resources, including the Government Concept of Operations (GCO) and IETM Concept of Operations (CONOPS).

Chapter 6 provides an overview of IETM development, including developing IETMs from legacy material and as a new program.

Chapter 7 presents a discussion on the future of IETMs from a development and delivery standpoint.

Appendix A reviews IETM software. It specifically discusses the foundation of many military IETMs: SGML (Standard Generalized Markup Language). The chapter introduces a structured document approach to the creation of technical data to permit the electronic interchange of information within a centralized DoD database.

Appendix B addresses the Continuous Acquisition and Life-cycle Support (CALS) philosophy and how it applies to IETMs. It also provides a discussion of the specifications underlying IETM development and delivery.

Appendix C addresses the training and IETM interface between products such as Interactive Courseware (ICW), Computer-based Training (CBT) and Computer Aided Instruction (CAI).

Appendix D contains Air Force-specific IETM acquisition information.

Appendix E contains Navy-specific IETM acquisition information.

Appendix F contains Army-specific IETM acquisition information.

Appendix G contains USMC-specific IETM acquisition information.

Appendix H presents a sample IETM Concept of Operations (CONOPS), which is defined earlier in the text. Additional supporting material is provided in subsequent appendices.

1.1.4 Roles and Responsibilities

The Program Manager and respective project leaders are ultimately responsible for ensuring that requirements and missions are adequately supported. Each program should establish a team to research and develop an IETM Concept of Operations (see Chapters 4 and 5) to define system/equipment Operational & Maintenance (O&M) data requirements and functionality of IETMs. The Program Manager should ensure that the team contains adequate representation from program, logistic and engineering disciplines, design agents, training, and user activities. Their functions and requirements are described below.

- Program/Logistics Element Manager - The acquisition, technical, and functional managers are responsible for creating, reviewing, validating, delivering, maintaining, and updating TMs in any format and for implementation, execution and management of IETM processes supporting the weapon systems or equipment; provides the IETM developers with engineering and technical data.

- Logistics Support (LS) Manager - Responsible for ensuring that the program is supported with accurate TMs and training; leads the procurement of TMs, training and courseware materials (if applicable), and monitors the process and progress for any system under the manager's cognizance.

- Program/Maintenance Engineer - Defines technical requirements for the program system and assists in interpreting and validating technical information that will produce the TM and courseware; acts as the Government agent for technical issues and provides additional technical support functions.

- Design Agent (e.g. contractor) - Provides initial technical data for the program and may author the IETM content.

- Technical Writer - Verifies the parts of the TM and training using logistics input data, and provides proposed changes and alterations to the deliverable products. Provides initial technical data for the program and may author IETM content.

- Training Agent - Provides and maintains the training facility and curriculum after a ready-for-training date has been reached.

- User - Personnel who use the TM to gather information or perform work (e.g., maintainer, trainer, or operator).